

Developing an EMS Continuity of Operations plan for the city of Wilmington Delaware

Executive Leadership

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An applied research project submitted to the National Fire Academy

As part of the Executive Fire Officer Program

January 2008

Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of other is set forth, quotation marks so indicate, and that appropriate credit is given where I use the language, ideas, expressions, or writings of another.

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ABSTRACT

This research was conducted to evaluate the method of delivery for Emergency Medical Services (EMS) and to develop an EMS continuity of operations plan (COOP) in the event the private vendor was no longer able to provide service for the City of Wilmington. EMS COOP was primarily developed to address surges placed on the EMS transport system by man-made or natural disasters. However, in this application the focus was on addressing the interruption in service caused by service provider. Wilmington currently uses an EMS system in which the primary provider of basic life support (BLS) transport services is a private ambulance company, First State Quality Transport (FSQT).

The problem is that the City of Wilmington does not currently have an EMS COOP for providing EMS transport should the current service be interrupted or discontinued. This condition had the potential to force the City of Wilmington to enter into a fire-based emergency medical transport service without proper planning.

The purpose of this research is to identify those factors which must be considered when developing an EMS COOP for the City of Wilmington. The descriptive research method was used to evaluate the public/private model against an exclusive fire-based model. The research procedures included an extensive literature search, and interviews. The research questions addressed were:

- a. What is the current method of EMS delivery for the residents of Wilmington Delaware?
- b. How should EMS transport be provided should the private service model be interrupted or discontinued to the city?
- c. If fire-based EMS transport is the option by the City of Wilmington, what would be the financial impact to the city?

- d. What other factors would influence the decision to pursue a fire-based EMS as opposed to contracting with another private vendor.

The research concluded that proper planning is required to develop an effective EMS COOP for the City of Wilmington. It showed that cities that were forced into provide EMS transport service incurred a heavy financial burden without the proper preparation. It was recommended that a comprehensive plan be developed that incorporated the favorable characteristics of the various available models.

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INTRODUCTION

Emergency medical transport provided in the City of Wilmington dates back to a service that has gone through many transition since its inception in the early 1900's. Today the major provider of the service is First State Quality Transport Company (FSQT), a private ambulance contractor who began providing basic pre-hospital emergency medical service (EMS) to the City of Wilmington Delaware in 1985. At its beginning, the service consisted of two full time Basic Life Support (BLS) units manned twenty-four hours a day, seven days a week. In later contract renewal with Keystone the service was expanded to include a third 12-hour ambulance.

Wilmington Fire Department and county volunteer ambulances provide additional EMS assets should all of Keystone ambulances be committed. The steady increase in the volume of EMS calls in the City of Wilmington has made it difficult for city units to keep pace with the demand for service. With this situation the question that must be asked is how EMS transport would be provided if the private vendor was no longer able to provide the service.

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- c. If fire-based EMS transport is the option by the City of Wilmington, what would be the financial impact to the city?
- d. What other factors would influence the decision to pursue a fire-based EMS as opposed to contracting with another private vendor.

BACKGROUND AND SIGNIFICANCE

The City of Wilmington is located in northern New Castle County in the state of Delaware. Wilmington received its charter as a borough from King George II in 1739 and was incorporated as a city in 1832. The city covers approximately 19 square miles in total area and 10.8 square miles in land mass. It is the largest city in the state with a population of 72,660 people and a density of 6,728 people per square mile (Conrad, 1908). The city is approximately 56 % African American, 36 % white and 8 % other. The form of government is an elected City Council and Mayor. Wilmington consists of a mixture of residential, commercial, industrial, and educational occupancies (U.S Census Bureau, 2000).

Liberal banking laws have recently made Wilmington a major financial center with such banks as MBNA, Bank One, Chase, ING and Juniper relocating headquarters to the city.

The fire service began in Wilmington with the Friendship Fire Company being organized as the first volunteer fire company in Wilmington on December 22, 1775. Over the years eleven additional fire companies were formed throughout the growing city to protect its citizens from the perils of fire. The Delaware General Assembly passed legislation on March 16, 1921 that created a fully paid fire department in the City of Wilmington.

EMS service in the City of Wilmington dates back to pre-twentieth century during the Wilmington Volunteer Fire Department era when the Phoenix Fire Company provided the only ambulance service for the entire city. Records indicate that the fire company was located at the corner of Twelfth and King Street in the center of the city and answered calls throughout. A

faithful horse named Ione pulled the ambulance until 1909 when she collapsed in the intersection of Taylor & Kirkwood Streets returning from a call (Every Evening Star, 1947). The fire company provided the service until 1919 when it was taken over by the Wilmington Police Department. The service remained under police control until 1941 when control was shared by the Wilmington Police and Levy Court.

Emergency Medical Service has experienced many changes since the days when the Phoenix Fire Company of the Wilmington Volunteer Fire Department, later to become Engine 4, provided what could be considered the first fire-based ambulance service for the citizens of Wilmington. In the years that followed the fire department continued to staff at least one ambulance for patient transport to hospitals within the city and the surrounding area.

The first private ambulance service vendor was contracted in 1985. That service was provided by the Delaware Ambulance Company which provided one unit for EMS transport. Today the City of Wilmington contracts with First State Quality Transport to provide three transport units, two (2) twenty-four hour basic life support ambulances, and one twelve-hour basic life support ambulance. The Wilmington Fire Department supplements the service by providing one ambulance that operates twelve hours per day (0800-2000) and an additional ambulance as needed from Rescue Co. 1. Additionally, engine companies are dispatched on medical responses should all of the EMS assets be committed.

EMS resources were increased to keep pace with an increasing demand for service. With this increase in service demand raises the question of how the demand would be met should the private service be interrupted or discontinued.

This research project, which was completed as a required component of the Executive Leadership class in the National Fire Academy's Executive Fire Officer Program (EFOP), was chosen for its relevance to the conditions in the Wilmington community. The research project

can be related to the Executive Leadership curriculum because the situation required adaptive leadership to be applied to develop a solution to the problem. The descriptive research method was used to determine the effectiveness of the EMS service being delivered and to develop an EMS contingency plan of operations for the City of Wilmington.

LITERATURE REVIEW

An extensive literature review was completed which included professional journals, textbooks and reports providing substantial information for developing an EMS transport contingency plan.

Trouble in Orlando

In 2000 the City of Orlando Florida and the Orlando Fire Department were confronted with the possibility of the lone provider of EMS transport service to the city would discontinue service. In a 2004 National Fire Academy applied research paper written Assistant Chief Gregory A. Hoggart he reported that John B. Furman, President and Chief Executive Officer of Rural Metro Corporation since 1998 had resigned his position as the leader of the company. Mr. Furman was replaced by Executive Vice President Bob Ramsey who was to manage the company until a successor was found. However, ten days later, Ramsey also resigned and the future of Rural Metro was very much in doubt. Because of these developments *Standard and Poor* lowered Rural Metro's corporate credit, senior unsecured debt and bank loan ratings to a single "B Plus" which prompted the company to enter into a restructuring program in hopes of slowing down the tailspin. Layoffs and cutbacks in operations were made in response to a 38 percent decrease in earnings in the first quarter of 2000. In March 2000 the third top executive Mark Liebner resigned to pursue other business interest. Speculation was that Liebner's exit was due to the problems with the company's cash flow and down grading of stock.

Other cities around the country started to feel the impact of the Rural Metro problems. Southwest Ambulance (owned by Rural Metro) in Clark County, Nevada, Rural Metro Medical Services in Fort Worth Texas and Rochester, New York saw a drastic decline in the quality of service provided. In May of 2000 Rural Metro the Arizona Republic report that operations would be shutdown in the major Texas markets of Houston, Dallas San Antonio and Corpus Christie. These managers of these cities had two months to develop a plan to provide EMS transport service for their respective cities.

The City of Orlando decided to plan for what it considered to be the inevitable and developed a contingency plan. A taskforce was formed with the responsibility of developing a plan that would provide service should the Metro Rural fail in their city. The Task force examined the need for personnel, equipment and operating cost and determined that the city would need 14 additional personnel at a cost of \$3,831,273 annually in salary and benefits. The plan also called for the purchase of eight additional transport units at a one time cost of \$75,000/unit. Equipment for each of the units would require an additional \$40,000.

Chief Hoggart indicated that the financial condition of Rural Metro eventually improved so there was not a need to implement the plan in Orlando. The plan was shelved with hopes that it would never have to be revisited. It was clear that the implementation of such a plan would place a huge financial burden on the city.

Developing the plan

What happen in the Texas and Florida clearly indicated the need for a viable EMS continuity of operations. It reinforced the need to be prepared with a plan that would ensure that EMS service to the public would continue without interruption. The plan should possess flexibility in staffing configurations, recruitment and expedited training programs to get

augmented EMS personnel in service as soon as possible. It would help to conduct an in-depth needs and resource analysis to identify possible shortfalls (San Mateo, 2007).

The needs assessment should include the following:

1. What is the current and future workload within the community?
2. What level of service can be provided by the fire department?
3. What equipment is available to provide the desired level of service?
4. What personnel are available or needed to provide the desired EMS services?
5. What are the time requirements for the department to provide the services?
6. What funding sources are available to implement the plan?

These questions are simple and straight forward and provide the necessary information that identify the health care needs within the community and compare them with the presence of or the lack of resources available to address those needs. The needs assessment prevents placing the square peg in the proverbial round hole. The one-size fits all EMS system does not exist so it would seem logical that there should be a standardized approach to determine the emergency medical transport needs for the community and what the system should provide. If a standard assessment and measurement tool was used to determine the community's needs in relation to the resources that are currently in place, a validated ambulance transportation system could be built that best meets the needs of the community. The needs assessment compares the current level of emergency medical service offered in the community to what could be provided in continuity of operations scenario (Chiaramonte, 2002).

In assessing the EMS service in the City of Wilmington one must understand that the primary service provider is First State Quality Transport (FSQT), a private vendor. FSQT has averaged over 13,000 calls for service over the past five years and that number peaked in 2007 when 14,600 calls were answered.

Even with two full time ambulances and a part time 12-hour ambulance FSQT has not been able to keep up with the demand for service. This has resulted in the Wilmington Fire Department responding to 1600 calls for service annually over the past five years. The fire department provides one full time ambulance and one 12-hours ambulance. An additional 300 calls for service are handled annually by county volunteer ambulances. It is quite obvious that should the private ambulance company decide to discontinue their service the impact would be felt not only in the city but also in the jurisdictions that surround the city (City of Wilmington, 2007).

When developing the EMS COOP, consideration should be given to who would provide the service. It should be determined if the fire department would pick up the service or are there other private companies that might be able to provide the service. There are three common pre-hospital emergency transport models in use in the United States, with countless nuances and unique variations within the three themes. These models consist of a private contract, fire-based and a public private partnership model. Each of the models provides unique benefits and challenges to the communities who utilize them (Gilbert, 2004).

The private contract service provider is a private for-profit company that provides ambulance transportation. It provides 911 emergency services, which are governed by a contractual agreement with the local government. These contracts are awarded through a competitive bidding process for the right to serve the local government entity exclusively for a period of time.

The Fire-based service provider is what its name implies, a fire agency that provides ambulance transport utilizing cross-trained dual role emergency medical technician firefighters. Many consider the local fire department to be the a natural fit when considering medical aid responsibility because it had a sizable body of reliable, trained and disciplined personnel,

operating within an existing command structure, possessing vehicular and communication resources, operating structural facilities located throughout the community and holding the public trust (Gilbert, 2004).

The public-private system provider integrates the private contract system with the fire-based system to provide pre-hospital care and emergency transport. Municipalities that use a combination fire/private system have found that such a system can offer a greater efficiency, patient care, and cardiac-arrest survival rates. The formation of a public/private partnership can also produce spin-off benefits for the fire service, ambulance companies and the citizens alike. The rapid move of the health care industry toward managed care will necessitate a change in the way pre-hospital EMS is administered, and a public/private partnership will help ensure an appropriate application of emergency care and transportation in a managed care environment (Sachs, 1997).

Fire Based vs. Private EMS Transport

The merits of fire-based vs. private industry EMS services have been the subject of much debate and extensive study by the International Association of Firefighters and the American Ambulance Association. The following exhibit displays the topics that have become the focus of the debate, highlighting the International Association of Firefighters position.

Comparison of Fire-Based vs. Private

Service Control Comparison

Fire-Based	Private
Optimum Response Times	Unacceptable Response Times
Average Fee Structure	Top of Scale Fee Structure
Must Respond in All Situations	Option to Not Respond in Select Circumstances
Cannot Strike	Potential for Employee Strike

Traditional and Dependable	Dependency on Service Contracts; May Be Less Stable
Citizen Control	Stockholder Control
Stable Employees; Low Turnover	Higher Turnover Rates
Public Service Orientation	Profit Orientation

(International Association of Fire Fighters, 1997)

The above matrix provides a rationale to encourage public agencies to assume the responsibility for medical transports based upon public service objectives. Fire-based EMS systems also have the advantage of dual-trained personnel, who provide fire-fighting services as well as perform various tasks and duties other than EMS. In addition, the quality of care provided by public agencies is generally considered superior to the care provided by private firms due to employee stability and continuous training requirements.

However, private transport providers have taken the lead in developing cheaper and faster service delivery methods. In fact, fire departments may be required to engage in a substantial reengineering process to become competitive with private providers. Private transport firms have personnel compensation and benefit packages that range from 25 to 50 percent less than public employee benefit and compensation packages. Compensation and benefits in both the public and private sector typically comprise 80 percent of the expenses associated with fully equipping, staffing and operating aid units for BLS transport services. One example that illustrates the impact of personnel expenses on service delivery is that the annual cost of a City of Seattle fully equipped and staffed aid unit is approximately \$1.35 million compared to \$400,000 to \$500,000 for a private firm. In addition, private transport firms have developed efficient service delivery methods that would need to be considered by the Seattle Fire Department. Private providers, including AMR and Rural/Metro, generally utilize status system management systems, which allows for more efficient use of resources through variable staffing

and deployment practices. Specifically, personnel and equipment are scheduled by hour of the day, day of the week, historical demands for services and demand based upon geographic consideration in the service area. Private firms also deploy resources from strategic field locations. Most public agencies, including the Seattle Fire Department, operate static delivery systems, with uniform shift changes and uniform unit deployment from fixed based facilities that are considered necessary due to their dual fire suppression and EMS responsibilities (Office of City Auditor, Seattle 1999).

The International City/County Managers Association (ICMA) conducts periodic surveys that ask municipalities and counties how services are provided. Of the nearly 1,600 respondents to the most recent available survey (based on 1997-1998 data), 36.9 percent of municipalities and counties had privatized ambulance service. The *Journal of Emergency Medical Services* (JEMS) surveys EMS provision in America's 200 largest cities, and finds that first response is dominated by public fire departments (nearly 97 percent). However, private for-profit firms most commonly provide patient transport (38 percent). Since an additional 4.3 percent of patient transporters are private not-for profit firms, private firms account for 42.1 percent of patient transporters. Since the JEMS survey only includes cities (and not, for example, counties), it actually understates the degree to which private providers serve large populations.

One of the key factors that will determine the how the contingency plan will be developed is the available revenue and resources. It does not make sense to develop a plan that the city does not have the capacity to implement should the need arise. It must be considered that during difficult economic times the public has displayed an increased interest in all levels of government budgetary and money management practices. It may be necessary to expedite the hiring practices to bring people in quickly and suspend procurement rules to acquire the equipment necessary to implement the plan (Graff 2001).

Most EMS systems are funded by two principal sources, local tax money and user fees. Some EMS providers offer annual subscriptions similar to auto-club memberships. In this arrangement, subscribers pay a modest upfront fee and do not receive bills for EMS services. EMS systems can be funded entirely by taxes, entirely by user fees, or by a combination of the two. Since higher user fees can allow for lower taxes, and since third-party payers cover most of the user fee, a high user fee need not necessarily worry customers. In fact, cities with little or no user fees actually use taxpayers to, in-effect; subsidize insurance companies and government reimbursing agencies. Recent changes to the Medicare fee schedule will likely mean decreased reimbursements from the federal government to most EMS providers. Cities may respond to decreased reimbursements by increasing subsidies to EMS providers or allowing providers to charge patients more in order to recoup the real cost of service (Goebel, 1997).

This literature review was a major component of this research project and provided significant data related to the development of EMS continuity of operations plans. The data provided this writer with useful information on the structure and content of the plan as well as considerations for how it should be implemented. The literature review included a comparison of fire-based and private EMS transport systems which would be helpful when determining the type of service delivery.

PROCEDURES

The research for this project began at the National Emergency Training Center (NETC) in Emmitsburg, Maryland in July 2007 with a subject search conducted in the Learning Research Center (LRC). A subject term search was conducted using the phrase “emergency medical transport contingency operations”. This search resulted in 300 references being found.

The search was then limited to those references published from 1995 through 2004. This refinement of the search resulted in 150 references being found.

A reference search was then conducted at Brandywine Branch of the New Castle County Library in Wilmington Delaware. Using similar search criteria, 75 additional references were found related to the subject. One of the stated purposes of this research project was to determine procedures for developing an emergency medical transport contingency operations plan for the City of Wilmington Delaware. The literature review, which included books, journals and electronic media, provided valuable information emergency medical transport systems and contingency operations.

The second phase of the research effort consisted of a 10 question survey that was distributed to various fire service organizations through out the country. The survey consisted of ten (10) questions which sought to retrieve information related to EMS contingency planning.

Twenty-five middle to upper level EMS managers responded to the survey. The data collected was limited to fire service personnel because it was this writer's opinion that that group would be the most effected if there were an interruption in EMS service. The following are the results of that survey:

1. Describe your fire service organization.

a. Career	75.0%
b. Volunteer	0.0%
c. Combination	20.8%
d. Other	4.2%

2. What is the number of personnel in your organization?

a. 1 – 25	8.3%
b. 25 – 50	37.5%
c. 75 – 100	20.8%
d. More tan 100	33.3%

3. What is the population of the community served by your agency?

a. 25,000 – 50,000	58.3%
b. 50,000 – 75,000	12.5%
c. 75, 000 – 100,000	4.2%
d. More than 100,000	25.0%

4. What is the number of annual EMS responses handled by your agency?

a. 100 – 500	14.3%
b. 500 – 1000	14.3%
c. 1000 – 5000	47.6%
d. 5000 – 10,000	23.8%

5. Describe the type of emergency medical transport that is provided in your community?

a. Fire-based EMS	37.5%
b. Private transport service	37.5%
c. Fire/Private Combination	12.5%
d. Other	12.5%

6. What level of training does the emergency medical transport personnel possess?

a. First Responder	0.0
b. NREMT-B	33.3
c. Firefighter/EMT	33.3
d. Other	33.3

7. What are the hours of operation for the emergency medical transport provider in your community?

a. 24 hours/day, 7 days/week	100%
------------------------------	------

- | | |
|------------------------------|------|
| b. 12 hours/day, 7 days/week | 0.0% |
| c. 8 hours/day, 7 days/week | 0.0% |
| d. Other | 0.0% |
8. Does your organization charge for the use of ALS or BLS transport service?
- | | |
|--------|-------|
| a. Yes | 45.8% |
| b. No | 54.2% |
9. Do you currently have a contingency operations plan for EMS operations in your community?
- | | |
|--------|-------|
| a. Yes | 37.5% |
| b. No | 62.5% |
10. If you do have an EMS contingency operations plan briefly describe the plan in the space provided.

The survey did not indicate a clear preference between fire-base and private EMS models, each received 33.7 percent. Likewise, those agencies that billed for ALS or BLS service was divided pretty much evenly. 45.8 percent did not billing for their service while 54.2 percent did bill.

It was surprising to learn that 62.5 percent of the agencies surveyed did not have an EMS COOP. Most of those who indicated that they did have a plan relied on mutual aid from other agencies to augment their service. Some indicated that they would provide the service with the EMT s on their fire apparatus.

Definitions

Advanced Life support (ALS): The advanced level of pre-hospital and inter-hospital emergency that includes the basic life support functions including cardiopulmonary resuscitation,

plus cardiac monitoring, cardiac defibrillation, administration of anti-arrhythmic agents, intravenous therapy and other authorized techniques and procedures.

Basic Life Support (BLS): The level of capability which provides pre-hospital noninvasive emergency patient care designed to optimize the patient's chances of surviving an emergency situation.

EMS Continuity of operations plan (COOP): A comprehensive plan to assure the continued delivery of critical EMS service in the event of increased demand on the service due to man-made and natural disasters.

Fire-based EMS provider: A fire service agency that provides ambulance transport utilizing cross-trained dual role emergency medical technician firefighters.

First Responder: A fire department that provides initial EMS response utilizing engine companies or other non-transport vehicles.

Private contract service provider: The private contract service provider is a private for-profit company that provides ambulance transportation. It provides 911 emergency services, which are governed by a contractual agreement with the local government.

RESULTS

The information provided by this research was used to provide answers to the following research questions as well as supply the necessary information for the systematic evaluation of the emergency medical transport system in the City of Wilmington Delaware.

Research Question 1: What is the level of emergency medical care and transport currently provided by the City of Wilmington Delaware? The research indicated that the emergency medical care system currently in use in the City of Wilmington is similar to the public-private partnership described in the literature review. The City contracts with First State Quality Transport to provide basic life support and emergency transport. First State provides two

dedicated ambulances twenty-four hours a day, seven days a week. A third dedicated ambulance is available 8 hours a day, seven days a week.

In the event of a major fire incident additional ambulance units are made available and are under the directions of the on-scene incident commander. Both the driver and the attendant are NREMT-B certified on all ambulances. First State has responded to an average of 13,000 calls for service over the last five years.

The Wilmington Fire Department staffs one full time ambulance that is staffed for a twelve-hour period from 0800-1800 hours. The ambulance is staffed by two dual-trained firefighters with NREMT-B certifications. A second ambulance is available on an as needed basis but requires that personnel from the Heavy Rescue Company provide the staffing.

Research Question 2: How should EMS transport be provided should the private transport service be interrupted or discontinued to the city? Contingency EMS transport should be based on a pre-determined plan to assure that adequate funding and resources are available to execute the plan. The cities of Houston, Dallas, San Antonio and Corpus Christie Texas were forced into taking over a service they were ill-prepared to handle. The City of Orlando Florida was almost faced with a similar situation. The research indicated that the most effective, efficient and economical way to provide the service in a contingency situation would be for a private EMS vendor to provide the service. The city should develop a request for proposal (RFP) that would determine what other medical transport companies are capable of providing the service and the cost of such a service. In this contingency situation it would be necessary for the fire department to provide the service until a contract can be executed with a new vendor. Until that contract is secured the fire department's three ambulances and a fourth reserve ambulance would be placed in service with overtime personnel paid at a straight rate. The requirement for

two nationally registered emergency medical technicians would be waiver to increase the pool of available personnel to staff the units.

The existing mutual agreement with the New Castle County volunteer fire companies would cover any shortfalls in the service. A memorandum of understanding (MOU) should also be entered with the county departments to secure their support in addressing the possible increase in calls for service in the city.

Research Question 3: If fire-based EMS transport is the option by the City of Wilmington, what would be the financial impact to the city? The implementation of a fire-based emergency medical transport system in the City of Wilmington would have to take in account the startup revenue required. The greatest cost would be the salaries of the additional personnel needed to staff the units. Staffing would require twelve - fourteen persons to be hired at a rate of 18 per hour, the rate for a dual-trained probationary firefighter. This expense could be offset by hiring personnel at a lesser rate who have trained as emergency medical technicians only. The city would need to acquire two – three additional transport units either through purchase or through a lease purchase agreement with an ambulance supplier. There would be an initial expense of \$100,000 - \$150,000.

In all was estimated that the city would have to expend approximately \$650,000 in initial startup cost. The city's fiscal picture has improved drastically with an unprecedented \$22 million surplus realized in fiscal year 2007. However, First State Quality Transport submits a \$0.00 bid to provide ambulance service to the city. All costs for the service is passed along to the insurance company or the service user. That being the case it would be difficult to convince the city administrator to commit to a fire based EMS transport system at this time.

Research question 4: What other factors would influence the decision to pursue a fire-based EMS as opposed to contracting with another private vendor? The research

indicated that there are definite benefits gained by incorporating fire fighter based responses into the emergency medical system. Optimum response times, no strike clauses, citizen control and dependability are just a few.

Another benefit discussed in the research was the possibility of alternative emergency work by the emergency medical personnel standing by at fire or technical rescue scenes. If the emergency medical personnel are dual role cross-trained firefighters they may be integrated in other areas of incident mitigation.

There are probably just as many arguments for the private contracted emergency medical system. In terms of cost, applied technology and system design private EMS is thought to be far superior to fire-based EMS. The research indicates that combining the benefits of both systems would produce a system that offers greater efficiency, patient care and cardiac-arrest survival rates. When seeking to answer the question of fire-based or private EMS service a thorough assessment of the EMS needs of the community must be conducted to determine what best fits the community.

DISCUSSION

The literature review established that Continuity of Operations or COOP referred to the maintenance of operations during a crisis. The foundation of a viable COOP program is the development and documentation of a COOP plan that, when implemented, will provide for the continued performance of an organization essential functions under all circumstances (San Mateo, 2007).

COOP plans are normally developed to address man-made and natural disasters that cause an abnormal surge in calls for service. However, in this application it is speculated that the surge will be created due to discontinuance in service by the EMS providers themselves. This research focused on developing an EMS COOP in the event the EMS transport provider was no

longer able to provide service. The City of Wilmington did not have an existing COOP plan and would have a difficulty in providing EMS transport service if required.

The initial step in establishing the plan was to assess the resources available in the Wilmington Fire Department to perform emergency medical transport should the private transport service provider not be able to provide the service. Chief Mike Chiaramonte stated that the assessment should be was simple, straight forward and asked the appropriate questions to gather the required information. The needs assessment prevents placing the square peg in the proverbial round hole. The one-size fits all EMS system does not exist so it would seem logical that there should be a standardized approach to determine the emergency medical transport needs for the community and what the system should provide. If a standard assessment and measurement tool was used to determine the community's needs in relation to the resources that are currently in place, a validated EMS COOP that best meets the needs of the community.

The needs assessment compares the current level of EMS responses in the city to what resources would be needed if the fire department or another vendor was to provide the service. In assessing the EMS service in the City of Wilmington one must understand that the primary service provider is First State Quality Transport (FSQT), a private vendor. FSQT has averaged over 13,000 calls for service over the past five years and that number peaked in 2007 when 14,600 calls were answered. Fire department units responded to 1600 calls for service annually over the same time period. This would indicate that the EMS COOP would have to account for at least 16,000 calls for service (City of Wilmington, 2007).

Another component of the needs assessment determined the equipment and personnel needed to provide the desired level of service. The Wilmington Fire Department has three full equipped ambulances available for service. Additionally, there are two reserve ambulances

which can be equipped and placed in service in a minimum time period. The EMS COOP plan would require that the four ambulances be committed to meet the service demand.

In regards to personnel needed to staff the EMS COOP, certifications in Firefighter Level II and NREMT-B have been a condition of employment in the Wilmington Fire Department since 2003. This has resulted in 100 of the 170 uniformed personnel, approximately 60 percent, holding NREMT-B certifications. Certification is optional for members hired before that date. As more members retire more will be hired with the NREMT-B certification. Eventually the entire department will be trained to the level of a dual role crossed trained Firefighter/EMT.

The research indicated that there are merits of the fire-based EMS system and the private system which should be given consideration when developing the EMS plan. Fire-based EMS gives the fire department better control of the service and allows for personnel to hold dual certifications as firefighters and EMT. The biggest advantage of the private vendor model is the fiscal impact to the city. It has been established that the private EMS system is more cost effective than a fire-based system. The City of Wilmington currently uses a combination system that utilizes fire department and a private vendor to provide the service (IAFF, 1997).

As a result of this research project the author believes that the Wilmington Fire Department will better be able to develop a realistic EMS COOP that would meet the service needs of the Wilmington community. It is understood that no plan would be able to address all of the possible scenarios that might exist, but it does provide a good start.

RECOMMENDATIONS

As stated in the research, in order to assure continuous emergency medical transport service in the City of Wilmington Delaware, there must be a comprehensive EMS continuity of operations plan (COOP). The plan should be developed by key members of city government and should be structured to provide EMS service to the community regardless of the contingency.

Key components of the plan should be:

1. EMS needs assessment that answers the following questions
 - a. What is the current and future workload within the community?
 - b. What level of service can be provided by the fire department?
 - c. What equipment is available to provide the desired level of service?
 - d. What personnel are available or needed to provide the desired EMS services?
 - e. What are the time requirements for the department to provide the services?
 - f. What funding sources are available to implement the plan?
2. Financial impact study
 - a. Any plan that is developed would be tied to the City's ability to provide the necessary funding.
 - b. Shortfalls will be identified which would indicate the need to revise the plan.
3. Contingency procurement guidelines
 - a. Procurement regulations that are define in the Wilmington City Code would have to be suspended to fast track the contracting process.
 - b. Legislation needed from City Council with the Mayors app
4. MOU with surrounding jurisdictions
5. Implementation guidelines

The fire department should use firefighters on an interim basis to bridge gaps in service until another private vendor is found to provide the service. Ultimately, the city should aggressively pursue a private vendor to provide the service. The plan should be reviewed annually to assure that it is current and revisions should be made if necessary. The Wilmington Fire Department and the City of Wilmington should take this opportunity to conduct the planning as opposed to reacting to circumstances.

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APPENDIX A

EMS Continuity of Operations Survey

1. Describe your fire service organization.
 - a. Career
 - b. Volunteer
 - c. Combination
 - d. Other
2. What is the number of personnel in your organization?
 - a. 1-25
 - b. 25-50
 - c. 75-100
 - d. More than 100
3. What is the population of the community served by your agency?
 - a. 25,000-50,000
 - b. 50,000-75,000
 - c. 75,000-100,000
 - d. More than 100,000
4. What is the number of annual EMS responses handled by your agency?
 - a. 100-500
 - b. 500-1000
 - c. 1000-5000
 - d. 5000-10,000

5. Describe the type of emergency medical transport that is provided in your community?
 - a. Fire-based EMS
 - b. Private ambulance service
 - c. Fire/private combination
 - d. Other
6. What level of training does the emergency medical transport personnel possess?
 - a. First responder
 - b. EMT-B
 - c. EMT-P
 - d. Other
7. What are the hours of operation for the emergency medical transport provider in your community?
 - a. 24 hours/day 7days/week
 - b. 12 hours/day 7 days/week
 - c. 8 hours/day 7days/week
 - d. Other
8. Do you currently charge for BLS or ALS transport service?
 - a. Yes
 - b. No
9. Do you currently have a contingency operations plan for EMS operations in your community?
 - a. Yes
 - b. No

10. If you do have an EMS contingency operations plan briefly describe the plan in the space provided.